

An EWMA P-Chart Based on Improved Square Root Transformation

Authors : Saowanit Sukparungsee

Abstract : Generally, the traditional Shewhart p chart has been developed by for charting the binomial data. This chart has been developed using the normal approximation with condition as low defect level and the small to moderate sample size. In real applications, however, are away from these assumptions due to skewness in the exact distribution. In this paper, a modified Exponentially Weighted Moving Average (EWMA) control chart for detecting a change in binomial data by improving square root transformations, namely ISRT p EWMA control chart. The numerical results show that ISRT p EWMA chart is superior to ISRT p chart for small to moderate shifts, otherwise, the latter is better for large shifts.

Keywords : number of defects, exponentially weighted moving average, average run length, square root transformations

Conference Title : ICMPAM 2014 : International Conference on Mathematical Physics and Applied Mathematics

Conference Location : Prague, Czech Republic

Conference Dates : July 10-11, 2014